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French
Date of Birth : June, 7, 1976
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Associate Professor of Organic Chemistry

TEACHING & ADMINISTRATIVE DUTIES

Teaching courses :

Organic chemistry (24h) + Teaching lab (150h)
Spectroscopy (NMR, MS) (39h) + Teaching lab (28h)

Administrative :

Current : Director of the chemical engineering degree at ENSC-Rennes (2023-)
Member of the executive board of the ENSC-Rennes (2014-)
Member of *Conseil National des Universités* (CNU Section 32) (2011-2015) (2023-)
Quality Management (ISO 9001) for the research process at the ENSC-Rennes (2022-)

Passed : Head of the CORINT-ENSCR Team (2022-2014)
Supervisor of teaching labs at the ENSC-Rennes (2015-2023)
Quality Management (ISO 9001) for the teaching process at the ENSC-Rennes (2012-2018)
Member of the Laboratory board (UMR CNRS 6226) (2011-2016)
Supervisor of the teaching lab of organic chemistry/biochemistry (2008-2015)
Manager of the *Olympiades de la Chimie en Bretagne* (2011-2015)
Member of the scientific committee of the ENSCR (2011-2014)
Member of the evaluation committee of *Bretagne Valorisation* (2008-2011)

RESEARCH EXPERIENCES

2010 **Habilitation à Diriger des Recherches**
Research topics: Synthesis and supramolecular self-assembly

2005-current **Associate Professor at the Ecole Nationale Supérieure de Chimie de Rennes (ENSCR)**
Research topics: Synthesis of glycolipids and supramolecular self-assembly
Carbohydrate chemistry
Polymer materials from renewable sources

2004-2005 Post-doctoral position in the **Jonathan Clayden's group** (The University of Manchester)
16 months Subject: Stereochemical relay through oligoureas

2002-2004 JSPS - Post-doctoral fellow in the **Eiichi Nakamura's group** (The University of Tokyo)
16 months Subject: Synthesis of amino-fullerene derivatives for gene delivery

1999-2002 Ph.D. in organic chemistry (University of Rouen) at the Institute of Research in Fine Organic
3 years Chemistry (IRCOF-Rouen)
Synthesis of carbasugars by diastereo and enantioselective intramolecular Diels-Alder reaction
Supervisors: **Jacques Maddaluno** and Jean-Claude Combret

OTHER QUALIFICATIONS

Languages: French: Mother language; English: Fluent; Japanese: Basic

ARTICLES, PATENTS, BOOK CHAPTERS

5 Book Chapters, 9 Patents, 60 Articles/Reviews, h-index = 21.

List of Publications

Book Chapters

5. Ludwig, A. D.; Berrée, F.; Lemiègre, L. **Sugar-based organogelators** In Carbohydrate Chemistry: Vol. 45; The Royal Society of Chemistry: **2022**; p 379.
4. Peyrot, C.; Lafite, P.; Lemiègre, L.; Daniellou R. **Low molecular weight carbohydrate-based hydrogelators** In Carbohydrate Chemistry: Vol. 43; The Royal Society of Chemistry: **2018**; p 243.
3. Ferrières, V.; Legentil, L.; Lemiègre, L. **Protecting group strategies towards glycofuranoses** In Protecting Groups - Strategies and Applications in Carbohydrate Chemistry, Editor : Vidal, S., Wiley-VCH: **2018**; p 337.
2. Benvegno, T.; Lemiègre, L.; Ballet, C.; Portier, Y.; Plusquellec, D. **Glycolipid-based nanosystems for the delivery of drugs, genes and vaccine adjuvant applications.** In Carbohydrate Chemistry: Vol. 40; The Royal Society of Chemistry: **2014**; p 341.
1. Benvegno, T.; Plusquellec, D.; Lemiègre, L. **Surfactants from Renewable Sources: Synthesis and Applications.** In *Monomers, Polymers and Composites from Renewable Resources*, Belgacem, M. N.; Gandini, A., Eds. Elsevier Limited: Amsterdam, **2008**; p 153.

Patents

9. Vitrimere à base de PHA

Audic, J.-L.; Lemiègre, L.; FR2405216, **2024**

8. Composition et son utilisation pour l'étanchéisation

Nicolas, S.; Maura, C.; Audic, J.-L.; Lemiègre, L.; FR3137386A1, **2022**

7. Composition bicouches et son utilisation pour l'étanchéisation

Nicolas, S.; Maura, C.; Audic, J.-L.; Lemiègre, L.; FR3137392A1, **2022**

6. Composition combustible, procédé de fabrication et utilisation

Audic, J.-L.; Lemiègre, L.; FR201751446, WO2018153877, **2017**

5. Trimannosylated lipids for vaccine purposes

Lemoine, F.; Mateo, V.; Midoux, P.; Pichon, C.; Benvegno, T.; Lemiègre, L.; FR201655296, **2016**

4. Nouvelle composition émulsionnante à caractère cationique

Benvegno, T.; Pérusse, D.; Lemiègre, L.; Guilbot, J.; Rolland, H. FR201361770, WO2015078890, **2013**

3. C-Glycoside compounds, and method for preparing C-glycoside compounds

Ranoux, A.; Lemiègre, L.; Benvegno, T. WO2010052314, **2010**

2. Thinners for aqueous suspensions of mineral particles and hydraulic binder pastes

Maitresse, P.; Pellerin, B.; Leising, F.; Olivi, N.; Noiret, N.; Lemiègre, L. WO2010112775, **2010**

1. Method for producing aminated fullerene

Nakamura, E.; Isobe, H.; Lemiègre, L. JP2006199674, **2006**

Articles

2025

60. Spectroscopic determination of Deborah numbers in membrane-mimetic bolaamphiphile assemblies

Jeftic, J.; Berchel, M.; Meriadec, C.; Lemiègre, L.; Artzner, F.; Benvegno, T. *Spectroscopy Letters* **2025**, *1*, 78-94.

2023

59. Nitroglycerin stabilisation in a polyester matrix synthesized by the polymerization of an epoxidized vegetable oil

Schwartz, C.; Comet, M.; Lemiègre, L.; Audic, J.-L.; Lallemand, B.; Bonnet, B.; Schnell, F.; Ott, A. K.; Spitzer, D.; Propellants Explosives, Pyrotechnics **2023**, *48*, e202300092.

58. A Mechanistic Study about the Formation of Tetracyanobutadienes Revealed an Autocatalytic Behavior

Lemiègre, L.; Trolez, Y. *Asian Journal of Organic Chemistry* **2023**, e202300321.

57. Alkylboronate β -Phenylglucoside versus Phenylboronate β -Alkylglucoside Organogelators

Ludwig, A. D.; Gorbunova, V.; Saint Jalmes, A.; Berrée, F.; Lemiègre, L. *ChemistrySelect* **2023**, *8*, e202300213.

56. A comprehensive study of tetracyanobutadiene push-pull chromophores derived from γ -pyranilidene

Philippe, C.; Melan, J.; Barsella, A.; Vives, T.; Leroux, Y. R.; Robin-Le Guen, F.; Lemiègre, L.; Jacquemin, D.; Gauthier, S.; Trolez, Y. *Tetrahedron Chem* **2023**, *5*, 100036.

2022

55. Adjusting the water-sensitivity of sugar/boronate-based organogels

Ludwig, A. D.; Ourvois-Maloisel, N.; Saint Jalmes, A.; Artzner, F.; Guégan, J.-P.; Tasseau, O.; Berrée, F.; Lemiègre, L. *Soft Matter* **2022**, *18*, 9026-9036.

54. Quadruple Functionalization of a Tetraphenylethylene Aromatic Scaffold with Ynamides or Tetracyanobutadienes: Synthesis and Optical Properties

Philippe, C.; Coste, M.; Bretonnière, Y.; Lemiègre, L.; Ulrich, S.; Trolez, T. *European Journal of Organic Chemistry* **2022**, e202200049.

53. Synthesis and photophysical properties of 1,1,4,4-tetracyanobutadienes derived from ynamides bearing fluorophores

Philippe, C.; Bui, A. T.; Beau, M.; Bloux, H.; Riobé, F.; Mongin, O.; Roisnel, T.; Cordier, M.; Paul, F.; Lemiègre, L.; Trolez, T. *Chemistry A European Journal* **2022**, *28*, e202200025.

52. Aerosol-Mediated Non-Viral Lung Gene Therapy: The Potential of Aminoglycoside-Based Cationic Liposomes

Le Gall, T.; Berchel, M.; Davies, L.; Mottais, A.; Ghanem, R.; Fautrel, A.; Gill, D.; Hyde, S.; Lehn, P.; Lehn, J.-M.; Lemiègre, L.; Benvegno, T.; Jaffrès, P.-A.; Pitard, B.; Montier, T. *Pharmaceuticals* **2022**, *14*, 25.

2021

51. Enzymatic synthesis of a series of thioglycosides, analogs of arbutin, owing efficient antipigmentation properties

Peyrot, C.; Didak, B.; Guillotin, L.; Landemarre, L.; Lafite, P.; Lemiègre, L.; Daniellou, R. *European Journal of Organic Chemistry* **2021**, 3812-3818.

50. Shape memory epoxy vitrimers based on waste frying sunflower oil

Nicolas, S.; Richard, T.; Dourdan, J.; Lemiègre, L.; Audic J.-L. *Journal of Applied Polymer Science* **2021**, 138, 50904.

49. 1,1,4,4-Tetracyanobutadiene-Functionalized Anthracenes: Regioselectivity of Cycloadditions in the Synthesis of Small Near-IR Dyes

Philippe, C.; Bui, A. T.; Batsongo-Boulingui, S.; Pokladek, Z.; Matczyszyn, K.; Mongin, O.; Lemiègre, L.; Paul, F.; Hamlin T. A.; Trolez, T. *Organic Letters* **2021**, 23, 2007-2012.

2020

48. Boron effect on sugar-based organogelators

Ludwig, A. D.; Saint Jalmes, A.; Mériadec, C.; Artzner, F.; Tasseau, O.; Berrée, F.; Lemiègre, L. *Chemistry A European Journal* **2020**, 26, 13927-13934.

47. Glycochimie Des polymères à la biocatalyse

Legentil, L.; Lemiègre, L.; Tranchimand, S.; Cammas-Marion, S.; Nugier-Chauvin, C.; Benvegna, T.; Ferrières, V. *Actualité Chimique* **2020**, 25-33.

46. Synthesis, characterization and unusual near-infrared luminescence of 1,1,4,4-tetracyanobutadiene derivatives

Bui, A. T.; Philippe, C.; Beau, M.; Richy, N.; Cordier, M.; Roisnel, T.; Lemiègre, L.; Mongin, O.; Paul, F.; Trolez, T. *Chemical Communications* **2020**, 56, 3571-3574.

2019

45. In vitro and in vivo immunomodulatory properties of octyl-β-D-galactofuranoside during Leishmania donovani infection

Guegan, H.; Ory, K.; Belaz, S.; Jan, A.; Dion, S.; Legentil, L.; Manuel, C.; Lemiègre, L.; Vivès, T.; Ferrières, V.; Gangneux, J.-P.; Robert-Gangneux, F. *Parasites Vectors* **2019**, 12:600.

44. Multiple-stage Precursor Ion Separation and High Resolution Mass Spectrometry toward Structural Characterization of 2,3-Diacyltrehalose Family from Mycobacterium tuberculosis

Frankfater, C.; Abramovitch, R. B.; Purdy, G. E.; Turk, J.; Legentil, L.; Lemiègre, L.; Hsu, F.-F. *Separations* **2019**, 6, 4; doi:10.3390/separations6010004.

2018

43. Diversion of a thioglycoligase for the synthesis of 1-O-acyl arabinofuranoses

Pavic, Q.; Tranchimand, S.; Lemiègre, L.; Legentil, L. *Chemical Communications* **2018**, 54, 5550-5553.

42. Preclinical evaluation of mRNA trimannosylated lipopolyplexes as therapeutic cancer vaccines targeting dendritic cells

Le Moignic, A.; Malard, V.; Benvegna, T.; Lemiègre, L.; Berchel, M.; Jaffrès, P.-A.; Baillou, C.; Delost, M.; Macedo, R.; Rochefort, J.; Lescaille, G.; Pichon, C.; Lemoine, F. M.; Midoux, P.; Mateo, V. *Journal of Controlled Release* **2018**, 278, 110-121.

2017

41. Microwave-Assisted Reduction of Nitroarenes by Aminothiophenol/dithiotreitol.

Peyrot, C.; Vivès, T.; Legentil, L.; Lemiègre, L.; Daniellou, R. *ChemistrySelect* **2017**, 2, 5214-5217.

40. Polyurethanes prepared from cyclocarbonated broccoli seed oil (PUcc): new biobased organic matrices for incorporation of phosphorescent metal nanocluster.

Loulergue, P.; Amela-Cortes, M.; Cordier, S.; Molard, Y.; Lemiègre, L.; Audic, J.-L. *Journal of Applied Polymer Science* **2017**, 134, 45339.

39. A Fully Enzymatic Esterification/Transesterification Sequence for the Preparation of Symmetrical and Unsymmetrical Trehalose Diacyl Conjugates.

Prabhakar, S.; Vivès, T.; Ferrières, V.; Benvegna, T.; Legentil, L.; Lemiègre, L. *Green Chemistry* **2017**, 19, 987-995.

2016

38. Synthesis of a Trimannosylated-Equipped Archaeal Diether Lipid for the Development of Novel Glycoliposomes.

Barbeau, J.; Lemiègre, L.; Quelen, A.; Malard, V.; Gaob, H.; Gonçalves, C.; Berchel, M.; Jaffrès, P.-A.; Pichon, C.; Midoux, P.; Benvegna, T. *Carbohydrate Research* **2016**, 70, 142-148.

37. Efficient isomerization of methyl arabinofuranosides into corresponding arabinopyranosides in presence of pyridine.

Prabhakar, S.; Lemiègre, L.; Benvegna, T.; Hotha, S.; Ferrières, V.; Legentil, L. *Carbohydrate Research* **2016**, 433, 63-66.

36. Synthesis of a novel archaeal tetraether-type lipid containing a diorthoester group as a helper lipid for gene delivery.

Barbeau, J.; Belmadi, N.; Montier, T.; Le Gall, T.; Dalençon, S.; Lemiègre, L.; Benvegna, T. *Tetrahedron Letters* **2016**, 57, 2976-2980.

2015

35. Synthesis and characterisation of bio-based polyester materials from vegetable oil and short to long chain dicarboxylic acids

Gobin, M.; Loulergue, P.; Audic, J.-L.; Lemiègre, L. *Industrial Crops and Products* **2015**, 70, 213-220.

2014

34. Modification of bipolar lipid conformation at the air/water interface by a single stereochemical variation

Terme, N.; Jacquemet, A.; Benvegna, T.; Vié, V.; Lemiègre, L. *Chemistry and Physics of Lipids* **2014**, 183, 9-17.

33. Thermal and Mechanical Properties of a Polyhydroxyalkanoate Plasticized with Biobased Epoxidized Broccoli Oil

Audic, J.-L.; Lemiègre, L.; Corre, Y.-M. *Journal of Applied Polymer Science* **2014**, 131, 39983.

32. Effects of a Novel Archaeal Tetraether-Based Colipid on the In Vivo Gene Transfer Activity of Two Cationic Amphiphiles

Le Gall, T.; Barbeau, J.; Barrier, S.; Berchel, M.; Lemiègre, L.; Jeftić, J.; Meriadec, C.; Artzner, F.; Gill, D. R.; Hyde, S. C.; Férec, C.; Lehn, P.; Jaffrès, P.-A.; Benvegna, T.; Montier, T. *Molecular Pharmaceutics* **2014**, 11, 2973-2988.

2013

31. Collapsed Bipolar Glycolipids at the Air/Water Interface: Effect of the Stereochemistry on the Stretched/Bent Conformations

Jacquemet, A.; Terme, N.; Benvegna, T.; Vié, V.; Lemiègre, L. *Journal of Colloid and Interface Science* **2013**, 412, 72-81.

30. Applications of Extremophilic Archaeal Lipids in the Field of Nanocarriers for Oral/Topical Drug Delivery (review)

Benvegny, T.; Lemiègre, L.; Dalençon, S.; Jeftić J., *Current Biotechnology* **2013**, *2*, 294-303.

29. Folate-equipped nanolipoplexes mediated efficient gene transfer into human epithelial cells

Mornet, E.; Carmoy, N.; Lainé, C.; Lemiègre, L.; Le Gall, T.; Laurent, I.; Marianowski, R.; Férec, C.; Lehn, P.; Benvegny, T.; Montier, T., *International Journal of Molecular Sciences* **2013**, *14*, 1477-1501.

2012

28. Stereochemical effect revealed in self-assemblies based on archaeal lipid analogues bearing a central five-membered carbocycles: A SAXS study

Jacquemet, A.; Mériadec, C.; Lemiègre, L.; Artzner, F.; Benvegny, T., *Langmuir* **2012**, *28*, 7591-7597.

2011

27. How the Stereochemistry of a Central Cyclopentyl Ring Influences the Self-Assembling Properties of Archaeal Lipid Analogues: Synthesis and CryoTEM Observations

Jacquemet, A.; Lemiègre, L.; Lambert, O.; Benvegny, T., *Journal of Organic Chemistry* **2011**, *76*, 9738-9747.

2010

26. Air/water interface study of cyclopentane-containing archaeal bipolar lipid analogues

Jacquemet, A.; Vié, V.; Lemiègre, L.; Barbeau, J.; Benvegny, T., *Chemistry and Physics of Lipids* **2010**, *163*, 794-799.

25. Synthesis and evaluation of C-glycosides as hydrotropes and solubilizing agents

Ranoux, A.; Lemiègre, L.; Benvegny, T., *Science in China Serie B: Chemistry* **2010**, *53*, 1957-1962.

24. Horner-Wadsworth-Emmons reaction from unprotected sugars in water or without any solvent: One step access to C-glycoside amphiphiles

Ranoux, A.; Lemiègre, L.; Benoit, M.; Guégan, J.-P.; Benvegny, T., *European Journal of Organic Chemistry* **2010**, 1314-1323.

2009

23. Supramolecular structures based on new bolaamphiphile molecules investigated by Small and Wide Angle X-ray Scattering and Polarised Optical Microscopy

Berchel, M.; Mériadec, C.; Lemiègre, L.; Artzner, F.; Jeftić, J.; Benvegny, T., *The Journal of Physical Chemistry B* **2009**, *113*, 15433-15444.

22. New Generation of Liposomes Called Archaeosomes Based on Natural or Synthetic Archaeal Lipids as Innovative Formulations for Drug Delivery. (review)

Benvegny, T.; Lemiègre, L.; Cammas-Marion, S. *Recent Patents on Drug Delivery & Formulation* **2009**, *3*, 206-220.

21. Archaeal tetraether bipolar lipids: structures, functions and applications. (review)

Jacquemet, A.; Barbeau, J.; Lemiègre, L.; Benvegny, T., *Biochimie* **2009**, *91*, 711-717.

20. Regioselective synthesis of folic acid conjugates from diether-type archaeal lipid analogues

Lainé, C.; Mocquet, C.; Lemiègre, L.; Benvegny, T., *Tetrahedron* **2009**, *65*, 1455-1460.

2008

19. Desymmetrization of a meso allylic acetal by enantioselective conjugate elimination.

Xu, L.; Regnier, T.; Lemiègre, L.; Cardinael, P.; Combret, J.-C.; Bouillon, J.-P.; Blanchet, J.; Rouden, J.; Harrison-Marchand, A.; Maddaluno, J., *Organic Letters* **2008**, *10*, 729-732.

18. Folate-equipped Pegylated Archaeal Lipid Derivatives: Synthesis and Transfection Properties.

Lainé, C.; Mornet, E.; Lemiègre, L.; Montier, T.; Cammas-Marion, S.; Neveu, C.; Carmoy, N.; Lehn, P.; Benvegny, T., *Chemistry A European Journal* **2008**, *14*, 8330-8340.

17. Glycine betaine as a renewable raw material to "greener" new cationic surfactants.

Goursaud, F.; Berchel, M.; Guilbot, J.; Legros, N.; Lemiègre, L.; Marcilloux, J.; Plusquellec, D.; Benvegny, T., *Green Chemistry* **2008**, *10*, 310-320.

16. Conformation and Stereodynamics of 2,2'-Disubstituted N,N'-Diaryl Ureas.

Clayden, J.; Lemiègre, L.; Pickworth, M.; Jones, L., *Organic & Biomolecular Chemistry* **2008**, *6*, 2908-2913.

15. Synthesis of enantiomerically enriched isotopically-labelled anilines by (-)-sparteine directed lithiation.

Clayden, J.; Lemiègre, L.; Pickworth, M., *Tetrahedron Asymmetry* **2008**, *19*, 2218-2221.

14. Helix persistence and breakdown in oligoureas of metaphenylenediamine: apparent diastereotopicity as a spectroscopic marker of helix length in solution.

Clayden, J.; Lemiègre, L.; Morris, G. A.; Pickworth, M.; Snape, T. J.; Jones, L. H., *Journal of the American Chemical Society* **2008**, *130*, 15193-15202.

13. Synthesis of unsymmetrical saturated or diacetylenic cationic bolaamphiphiles.

Berchel, M.; Lemiègre, L.; Trépout, S.; Lambert, O.; Jeftić, J.; Benvegny, T., *Tetrahedron Letters* **2008**, *49*, 7419-7422.

12. Synthesis of unsymmetrical spin-labelled bolaamphiphiles.

Berchel, M.; Lemiègre, L.; Jeftić, J.; Benvegny, T., *Tetrahedron Letters* **2008**, *49*, 4690-4692.

11. Nouveaux émulsifiants "verts" sur base végétale pour les industries routière et cosmétique.

Benvegny, T.; Plusquellec, D.; Lemiègre, L.; Marcilloux, J., *Annales des falsifications, de l'expertise chimique & toxicologique* **2008**, *969*, 32-35.

10. Archaeal Lipids: Innovative Materials for Biotechnological Applications. (review, cover art)

Benvegny, T.; Lemiègre, L.; Cammas-Marion, S., *European Journal of Organic Chemistry* **2008**, 4725-4744.

2007

9. Archaeosomes based on synthetic tetraether-like lipids as novel versatile gene delivery systems.

Réthoré, G.; Montier, T.; Le Gall, T.; Delépine, P.; Cammas-Marion, S.; Lemiègre, L.; Lehn, P.; Benvegny, T., *Chemical Communications* **2007**, 2054-2056.

8. Synthesis of oxy aminated [60] and [70]fullerenes with cumene hydroperoxide as oxidant.

Lemiègre, L.; Tanaka, T.; Nanao, T.; Isobe, H.; Nakamura, E., *Chemistry Letters* **2007**, 36, 20-21.

7. Synthesis and stacked conformations of symmetrical and unsymmetrical oligo-ureas of metaphenylenediamine.

Clayden, J.; Lemiègre, L.; Helliwell, M., *Journal of Organic Chemistry* **2007**, 72, 2302-2308.

6. Synthesis of archaical bipolar lipid analogues: A way to versatile Drug/Gene delivery systems.

Brard, M.; Lainé, C.; Réthoré, G.; Laurent, I.; Neveu, C.; Lemiègre, L.; Benvegna, T., *Journal of Organic Chemistry* **2007**, 72, 8267-8279.

2005-2002

5. Ring fission of chiral cyclic acetals plus intramolecular [4+2] cycloaddition: a sequential access to medium-size lactones. Application to the synthesis of carbasugars.

Lemiègre, L.; Stevens, R. L.; Combret, J. C.; Maddaluno, J., *Organic & Biomolecular Chemistry* **2005**, 3, 1308-1318.

4. Regioselective oxygenative tetraamination of [60]fullerene. Fullerene-mediated reduction of molecular oxygen by amine via ground state single electron transfer in dimethyl sulfoxide.

Isobe, H.; Tanaka, T.; Nakanishi, W.; Lemiègre, L.; Nakamura, E., *Journal of Organic Chemistry* **2005**, 70, 4826-4832.

3. Synthesis of alpha,beta-unsaturated dioxanes, dioxolanes and dioxepanes by trans-acetalisation of dimethylacetals with meso or C-2-symmetrical 1,2-, 1,3- and 1,4-diols.

Lemiègre, L.; Lesetre, F.; Combret, J. C.; Maddaluno, J., *Tetrahedron* **2004**, 60, 415-427.

2. Conjugated elimination versus [1,2]-Wittig rearrangement of unsaturated diox(ol)anes.

Lemiègre, L.; Regnier, T.; Combret, J. C.; Maddaluno, J., *Tetrahedron Letters* **2003**, 44, 373-377.

1. Thermal/hyperbaric heterocycloaddition of 1,4-dialkoxy-1,3-dienes: The de novo (E,Z) way to sugars.

Bataille, C.; Begin, G.; Guillam, A.; Lemiègre, L.; Lys, C.; Maddaluno, J.; Toupet, L., *Journal of Organic Chemistry* **2002**, 67, 8054-8062.